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Case Report

The ASH Impression Technique: A Game-Changer in the Prosthodontic Management of Mandibular Ridge Resorption

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Abstract: Residual ridge resorption (RRR) is a chronic, progressive, and irreversible process characterized by the gradual loss of alveolar bone beneath the mucoperiosteum following the extraction of natural teeth. It is a multifactorial phenomenon influenced by anatomical, biomechanical, metabolic, and systemic factors. Among the two arches, the mandibular ridge typically undergoes more rapid and severe resorption than the maxillary counterpart, leading to a compromised denture-bearing foundation over time. This pronounced mandibular atrophy significantly impairs the stability, support, and retention of complete dentures, often resulting in functional limitations and reduced patient satisfaction. In prosthodontic practice, the rehabilitation of patients with severely resorbed mandibular ridges remains a formidable clinical challenge. The decreased surface area, altered ridge morphology, and loss of vertical height collectively contribute to poor denture base adaptation, reduced stability, and increased mucosal mobility. These issues are particularly pronounced in advanced stages of resorption as categorized by Atwood's classification, where Order V denotes a low, well-rounded ridge and Order VI reflects a flat or depressed ridge form with minimal or no residual alveolar height. Such conditions severely compromise the effectiveness of conventional denture fabrication techniques and require careful modifications in clinical protocols. Among the many factors contributing to the long-term success of complete dentures, the stability of the mandibular denture often serves as a critical determinant. Lack of stability can trigger a cascade of issues such as soreness, ulcerations, masticatory inefficiency, and patient dissatisfaction. Additionally, poorly adapted dentures may exert uneven or excessive pressure on the underlying tissues, thereby accelerating the resorptive process. This clinical case report presents the prosthodontic management of a patient with a highly atrophic mandibular ridge (Atwood's Order V) using a novel "cocktail impression technique." Recognizing the limitations of a single impression philosophy, this hybrid approach integrates mucostatic, selective pressure, and functional techniques to enhance tissue adaptation, minimize displacement, and evenly distribute occlusal forces. The strategy is tailored to the patient's unique anatomy, promoting denture stability, retention, and long-term ridge preservation. Central to this approach is the ASH (Arpit Sikri's Hybrid) Impression Technique, developed by Dr. Arpit Sikri. Specifically designed for atrophic ridges with flabby anterior tissues, it incorporates a custom mandibular tray with an embedded prefabricated metal mesh to enhance rigidity, ensure uniform pressure, and prevent distortion. By blending multiple impression

philosophies into a single, scientifically driven, and reproducible method, the ASH technique offers a conservative yet highly effective solution for managing complex edentulous cases.

Keywords: ASH (Arpit Sikri's Hybrid) Impression Technique, Atrophic Ridge, Cocktail Impression Technique, Dynamic Impression, Flabby Ridge, Functional Impression, Residual Ridge Resorption, Severely Atrophic Mandibular Ridge, Severely Resorbed Edentulous Mandibular Ridge.

INTRODUCTION

The prosthodontic rehabilitation of patients with severely resorbed mandibular ridges continues to pose a significant clinical challenge. The anatomical complexities associated with advanced ridge atrophy often compromise the fundamental principles of denture retention, stability, and support. Residual ridge resorption (RRR) is a chronic, progressive, and irreversible physiological phenomenon that commonly follows tooth extraction [1]. It involves the gradual loss of alveolar bone over time, and its progression is influenced by multiple factors including local mechanical forces, systemic health, nutritional status, and metabolic activity [2].

Importantly, the mandible exhibits a more accelerated and pronounced rate of resorption compared to the maxilla [3]. The resorptive process is particularly rapid during the initial six months following tooth extraction—when up to two-thirds of the bone height may be lost—and thereafter proceeds at an approximate rate of 0.4 mm per year [4]. This continual loss of bony architecture severely affects the prosthodontic prognosis in edentulous patients, particularly in the elderly. To facilitate the classification and clinical understanding of ridge resorption, Atwood's six-order classification remains widely accepted [5]. It spans from Order I, representing the pre-extraction ridge morphology, to Order VI, which is characterized by a flat or depressed ridge with minimal vertical height and broad muscle insertions—rendering it unsuitable for conventional denture retention without significant modifications.

With advances in healthcare contributing to increased life expectancy, a growing segment of the population now consists of long-term denture wearers, many of whom present with profound ridge atrophy. These patients often exhibit additional age-related anatomical and physiological alterations, such as thinning of the oral mucosa, decreased resilience of soft tissues, reduced salivary flow, lower pain tolerance, compromised neuromuscular coordination, and a diminished adaptive capacity. Collectively, these factors render the achievement of adequate mandibular denture stability and retention exceedingly difficult, even for experienced clinicians [6].

While dental implants and surgical ridge augmentation procedures have emerged as viable treatment options for such patients, their applicability is often limited. Advanced age, systemic health issues (e.g., cardiovascular diseases, diabetes, osteoporosis), financial considerations, or personal reluctance to undergo invasive treatment frequently preclude their use. Consequently, the fabrication of conventional complete dentures continues to be the most accessible and practical solution for the prosthodontic management of these individuals. When executed with precision, well-fitting complete dentures can significantly enhance oral function, esthetics, phonetics, and overall quality of life for edentulous patients [7].

Given the inherent challenges associated with extreme ridge atrophy, the accuracy and appropriateness of the final impression technique become pivotal to clinical success. An ideal impression must accurately capture the denture-bearing tissues in their resting or functional form, ensuring maximal contact, optimal distribution of masticatory forces, and minimal trauma to the underlying structures. Numerous impression philosophies have been proposed over the years for such cases, including the admixed technique [8], the all-green technique [9], the selective pressure technique [10], and the neutral zone technique [11]. Each of these methods seeks to balance tissue preservation with prosthesis stability by addressing the dynamic nature of the oral environment and the functional demands placed on the prosthesis.

This clinical case report introduces a novel, integrative approach termed the "ASH (Arpit Sikri's Hybrid) Impression Technique." As the name suggests, this method synthesizes the principles and advantages of multiple established impression philosophies to develop a customized, patient-specific technique tailored to the unique challenges of an atrophic and flabby anterior mandibular ridge. The primary aim is to enhance the stability, retention, and comfort of the final prosthesis while mitigating further ridge resorption.

By selectively incorporating elements from various impression techniques, the ASH (Arpit Sikri's Hybrid) Impression Technique offers a conservative yet effective alternative in cases where surgical or implant-based options are contraindicated.

Through this case, we aim to underscore the clinical utility of customized impression strategies that adapt to a patient's anatomical limitations while maximizing prosthodontic outcomes. This technique not only exemplifies the importance of clinical innovation but also reinforces the enduring relevance of conventional prosthodontics in managing complex edentulous scenarios.

CASE REPORT

A 65-year-old female patient presented to Dr. Sikri's Multispeciality Dental Hospital, Amritsar, Punjab, India, with the chief complaint of difficulty in chewing and speaking. A comprehensive clinical and radiographic examination was performed following the recording of her medical and dental history. Her medical history was largely unremarkable. Dental history revealed that she had been wearing removable complete dentures for the past 20 years, with tooth loss primarily attributed to chronic periodontal disease [Figures 1 & 2].

The patient's general health status was assessed as average. Regarding oral hygiene, she reported rinsing her mouth twice daily. There were no notable systemic conditions, deleterious oral habits, or other health-related concerns.

From a socio-psychological standpoint, the patient was married, had two children, and had completed her upper secondary education (10+2 level). Her psychological disposition was philosophical, reflecting a cooperative and accepting attitude towards dental treatment.

During the extraoral examination, several key features were observed [Figures 3, 4 & 5]. The patient's facial form was square-tapering, and her profile was convex, characterized by a prognathic maxilla and retrognathic mandible. Facial symmetry was mildly asymmetrical but within acceptable limits. Both facial height and muscle tone were within normal range. She had brown eyes, a fair complexion, thin lips, and an average facial length. Examination of the temporomandibular joints (TMJ) revealed no abnormalities, and the lymph nodes were non-palpable and non-tender.

Intraoral examination revealed a maxillary arch with a conventional residual ridge [Figure 6], whereas the mandibular arch exhibited a flat, low, well-rounded, and atrophic ridge, consistent with Atwood's Order V classification [Figure 7]. These findings were corroborated with clinical images. The mucosa appeared thin and atrophic, characteristic of a highly resorbed mandibular ridge, often observed in elderly patients, along with diminished tissue resiliency, poor muscle tone, and reduced adaptive capacity. The anterior mandibular ridge was flabby in nature. The inter-arch space was found to be adequate, and primary undercuts were noted in both the maxillary anterior and posterior regions. No bony irregularities were observed.

Soft tissue and mucosal assessment revealed that both the lip and cheek mucosa appeared normal. In the floor of the mouth, the lingual frenum and plica were within normal limits, and the retromylohyoid fossa was classified as Type 1. The tongue was normal in size and mucosal appearance and exhibited a typical gag reflex. Examination of the palate showed the incisive papilla, rugae, and mucosa to be unremarkable. The palatal vault was U-shaped, the junction of the hard and soft palate was classified as Class I, and the posterior palatal seal (PPS) area was compressible.

Vestibular depth assessment showed that the maxillary labial and buccal vestibules were deep, whereas the mandibular vestibules were shallow. Frenal attachments appeared normal in all regions. The patient's saliva was of mixed consistency, with normal flow and quantity.

After evaluating the clinical findings, the patient was offered the following three treatment options:

1. Implant-supported prosthesis
2. Ridge augmentation procedures followed by complete dentures
3. Conventional complete dentures

Each modality was thoroughly explained to the patient, including procedural details, anticipated outcomes, cost implications, and the level of surgical intervention required. Considering her advanced age, financial constraints, surgical apprehension, and willingness to comply, the patient opted for the fabrication of conventional complete dentures.

Given the challenging anatomy and the need for optimal stability and retention in a resorbed mandibular ridge, the ASH (Arpit Sikri's Hybrid) Impression Technique was selected for making the final impression. This technique has been specifically advocated for cases involving minimal ridge support, where conventional methods fail to provide adequate denture base adaptation and functional comfort.

PROCEDURE

The preliminary steps of complete denture fabrication remained the same:

1. Primary Impressions:

The clinical protocol began with the recording of preliminary impressions to delineate the full denture-supporting area for subsequent custom tray fabrication. Primary impressions of the maxillary and mandibular arches were made using putty (GC Flexceed Putty, GC Asia Dental Pvt. Ltd., Singapore) [Figure 8].

2. Primary Cast Preparation:

Beading and boxing of the primary impressions were carried out (MAARC Dental, Maharashtra, India) to obtain proper primary casts using Type II dental plaster (GypRock Plaster, Rajkot, Gujarat, India) [Figure 9].

3. Spacer Application:

The thickness of the wax spacer was confirmed using a Dental Gauge Wax Caliper (Caliper Iwanson Wax, GDC Fine Crafted Dental Pvt. Ltd., Hoshiarpur, India). A single-thickness wax spacer was adapted on the maxillary primary cast [Figure 10]. For the mandibular primary cast, a double-thickness wax spacer (MAARC Dental, Maharashtra, India) was carefully positioned over the anterior flabby tissue region to ensure sufficient relief [Figure 11].

4. Tin Foil Adaptation:

Tin foil was carefully adapted over the wax spacer on both the maxillary and mandibular edentulous primary casts [Figures 12 & 13].

5. Customized Prefabricated Metal Mesh Tray:

For the mandibular cast, a prefabricated metal mesh (MAARC–CE Reinforcement Golden Mesh, Shiva Products, Thane, India) was customized (cut into a small section) and adapted over the flabby ridge area [Figure 14].

6. Custom Tray Fabrication:

Custom trays were fabricated using autopolymerizing acrylic resin (DPI RR Cold Cure, Dental Products of India, Mumbai, India) [Figures 15 & 16]. For the mandibular ridge, following the principles of the Dynamic Impression Technique [12], the tray design included a 1 mm wax spacer, with a double-thickness wax spacer in the region of the anterior mandibular flabby ridge, and cylindrical mandibular rests placed bilaterally in the molar region at an increased vertical dimension. The lingual surfaces of these rests were carved concavely to allow free tongue movement and prevent impingement. These rests ensured proper tray stabilization during impression procedures by minimizing anteroposterior and mediolateral displacement upon closure [Figures 17–20].

7. Border Moulding:

For the maxillary arch, border moulding was performed using a low-fusing green stick compound (Pinnacle Tracing Sticks, Dental Products of India, Mumbai, India) [Figure 21]. Once finalized, the wax spacer on the custom tray was removed [Figure 22].

8. Final Impression:

For the mandibular final impression, the McCord and Tyson technique was employed—ideal for severely resorbed flat mandibular ridges [8]. A mixture of high-fusing impression compound (Hiflex Impression Compound, Prevest DenPro Limited, Jammu, India) and green tracing sticks (Pinnacle Tracing Sticks, Dental Products of India, Mumbai, India) in a 3:7 weight ratio was heated to 60°C, kneaded into a homogeneous mass, and loaded into the tray after spacer removal.

The tray was inserted into the patient's mouth, and the patient was instructed to close gently, allowing the mandibular rests to contact the maxillary alveolar ridge. This ensured proper orientation and stabilization of the tray during functional molding.

To record the functional state of oral musculature, the patient was guided through physiologic movements:

- Pulling in the lips
- Sucking in the cheeks
- Running the tongue along the lips
- Swallowing water with the mouth closed
- Speaking and tongue protrusion (as needed)

These dynamic movements helped mold the impression material in accordance with the patient's neuromuscular patterns and tissue function. Once set intraorally, the impression was chilled extraorally and then reinserted to evaluate pressure sensitivity. Firm digital pressure was applied over the denture-bearing area and along the mandibular border using thumb compression. Proper tissue loading was confirmed when discomfort was elicited only at the thumb pressure points and not across the entire bearing area. The green stick impression compound was carefully removed from the region where the customized prefabricated metal mesh was adapted, as this area was flabby in nature. Following the removal of the green stick compound, the final impression was made using a low-viscosity vinyl polysiloxane elastomeric impression material (GC Flexceed Light Body, GC Asia Dental Pvt. Ltd., Singapore) [Figures 23–28].

9. Impression Disinfection:

Following inspection for defects, the impression was disinfected with 2% glutaraldehyde (Cidex Solution 2% Glutaraldehyde, Shandong Retouch Wash and Sterilize Technology Co., Ltd., China).

10. Master (Definitive) Cast Preparation:

The final impressions [Figure 29] were beaded using the **plaster-pumice method** [Figure 30], then boxed with boxing wax (MAARC Dental, Maharashtra, India) [Figure 31] to allow fabrication of well-defined master casts. These were poured using Type III dental stone (GypRock Stone, Rajkot, Gujarat, India) [Figure 32].

11. Denture Base and Occlusal Rim Fabrication:

Temporary denture bases [Figure 33] and occlusal rims [Figure 34] were fabricated on the definitive casts.

12. Facebow Transfer:

The orientation jaw relation was recorded using a facebow (Hanau™ Springbow, Whip Mix, Kentucky, USA) and transferred to a semiadjustable articulator (Hanau™ Wide-Vue, Whip Mix, Kentucky, USA).

13. Centric Jaw Relation:

After the facebow transfer, centric relation was recorded using the Nick and Notch method [Figure 35], and the casts were articulated on the semiadjustable articulator.

14. Neutral Zone Recording:

The mandibular wax occlusal rim was removed, and a second custom tray was fabricated using autopolymerizing acrylic resin (DPI RR Cold Cure, Dental Products of India, Mumbai, India), incorporating high-fusing compound stops to maintain vertical dimension. Orthodontic wire loops (Smith Stainless Steel Wire, K.C. SMITH & CO., England) were embedded for retention.

Greenstick compound was softened and loaded onto the tray. The patient performed functional movements—swallowing, sipping water, sucking, speaking, and tongue protrusion—to shape the compound to the functional space.

After capturing the neutral zone, two putty indices (buccal and lingual) were fabricated up to the occlusal plane to guide tooth positioning within the neuromuscularly balanced zone.

15. Teeth Selection & Arrangement:

Following neutral zone and occlusal registration, teeth were selected, and arrangement was done following established prosthodontic principles.

16. Trial and Sealing:

The trial denture was evaluated intraorally for function, fit, and esthetics [Figures 36 & 37]. Once confirmed, the trial base was sealed to the definitive cast and removed from the articulator.

17. Flasking:

Both maxillary and mandibular trial dentures underwent flasking.

18. Processing:

After dewaxing, a tin foil substitute (DPI Heat Cure Cold Mould Seal, Dental Products of India, Mumbai, India) was applied. The dentures were packed and processed using conventional heat-cure acrylic resin (DPI Heat Cure, Dental Products of India, Mumbai, India).

19. Cleaning:

The processed dentures were cleaned using an ultrasonic cleaner.

20. Final Evaluation:

After finishing and polishing, the dentures were tried in the patient's mouth [Figures 38 & 39]. Adjustments to esthetics and occlusion were made as needed. The final removable complete dentures were delivered to the patient [Figure 40].

21. Post-Delivery Care:

The patient received instructions on denture care and maintenance. Follow-up visits were scheduled at 24 hours, 1 week, and 1 month. Ultimately, the patient expressed satisfaction with the esthetics, speech clarity, and function of the newly fabricated dentures [Figure 41].

The procedural steps involved in the clinical and laboratory fabrication of complete dentures for a patient with a flabby mandibular ridge and resorbed anatomy are summarized in Table 1. Each step outlines the materials used and highlights special techniques—such as the McCord and Tyson technique, the use of a prefabricated metal mesh, and dynamic impression methods—to achieve optimal denture fit and function.

Table 1: Step-by-Step Protocol for Complete Denture Fabrication

S. No.	Procedure	Description
1	Primary Impressions	Preliminary impressions using putty to record denture-supporting areas.
2	Primary Cast Preparation	Beading and boxing of impressions; poured in Type II dental plaster.
3	Spacer Application	Wax spacer thickness confirmed with caliper. Double-thickness spacer over flabby ridge (mandibular cast).
4	Tin Foil Adaptation	Tin foil placed over wax spacer on both casts for separation and relief.
5	Prefabricated Metal Mesh Tray	Metal mesh customized and adapted on mandibular flabby ridge area.
6	Custom Tray Fabrication	Fabricated with cold cure acrylic resin. Mandibular tray designed with wax spacer, rests, and carved lingual surfaces for stabilization and tongue freedom.
7	Border Moulding	Performed for the maxillary tray using green stick compound.
8	Final Impression	McCord & Tyson technique used for mandibular arch with impression compound-green stick mix, followed by final wash impression. Functional movements used to record dynamic tissue activity.
9	Impression Disinfection	Disinfection done with 2% glutaraldehyde.
10	Master Cast Preparation	Beading with plaster-pumice, boxing with wax, and pouring in Type III dental stone.
11	Denture Base & Occlusal Rim Fabrication	Temporary denture bases and occlusal rims fabricated on definitive casts.
12	Facebow Transfer	Facebow used for orientation jaw relation transfer.
13	Centric Jaw Relation	Recorded using Nick and Notch method; casts articulated on semiadjustable articulator.
14	Neutral Zone Recording	Second custom tray fabricated; compound shaped via functional movements. Buccal and lingual putty indices made to guide tooth placement.
15	Teeth Selection & Arrangement	Done per prosthodontic guidelines following neutral zone registration.
16	Trial and Sealing	Trial dentures evaluated intraorally and sealed after verification.
17	Flasking	Trial dentures flasked for final processing.
18	Processing	Processed using heat-cure acrylic with tin foil substitute applied during packing.
19	Cleaning	Processed dentures cleaned in an ultrasonic cleaner.
20	Final Evaluation	Dentures tried intraorally; adjustments made as necessary; final delivery performed.
21	Post-Delivery Care	Instructions given on denture care. Follow-ups scheduled at 24 hours, 1 week, and 1 month. Patient reported satisfaction with function, esthetics, and speech.

Figure 1: Previous complete dentures – Occlusal view

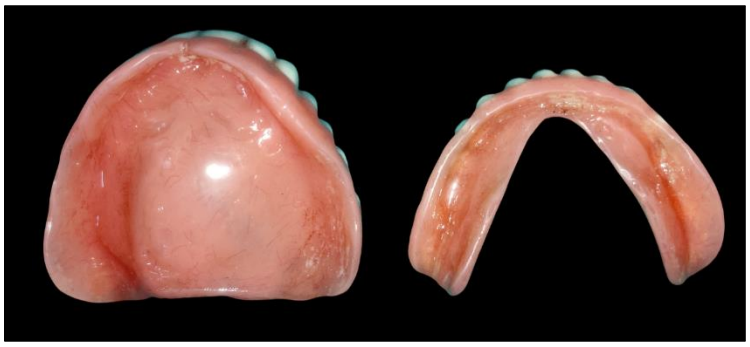

Figure 2: Previous complete dentures – Intaglio view

Figure 3: Extraoral examination – Frontal view

Figure 4: Extraoral examination – Lateral view

Figure 5: Extraoral examination – Preoperative smile

Figure 6: Intraoral examination – Edentulous maxillary ridge

Figure 7: Intraoral examination – Resorbed edentulous mandibular ridge (Atwood's Order V)

Figure 8: Primary impressions – Maxillary and mandibular

Figure 9: Primary casts – Maxillary and mandibular

Figure 10: Wax spacer adaptation – Maxillary primary cast

Figure 11: Wax spacer adaptation (double thickness) – Mandibular primary cast

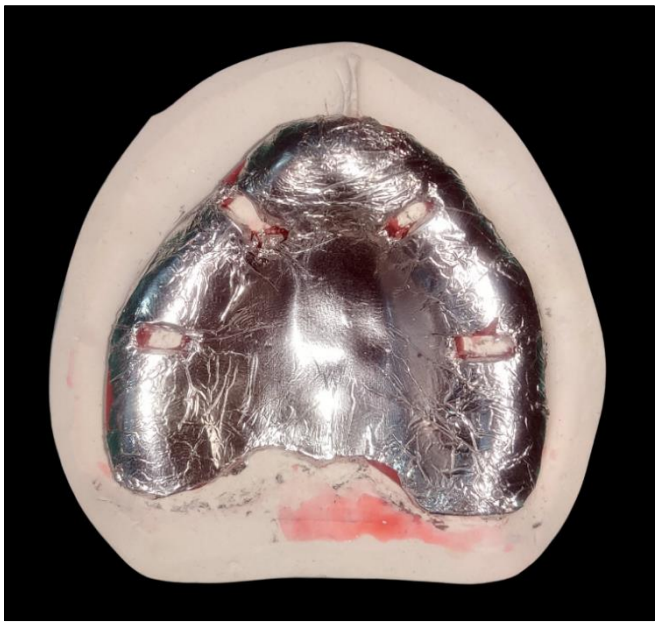

Figure 12: Tin foil adaptation – Maxillary primary cast

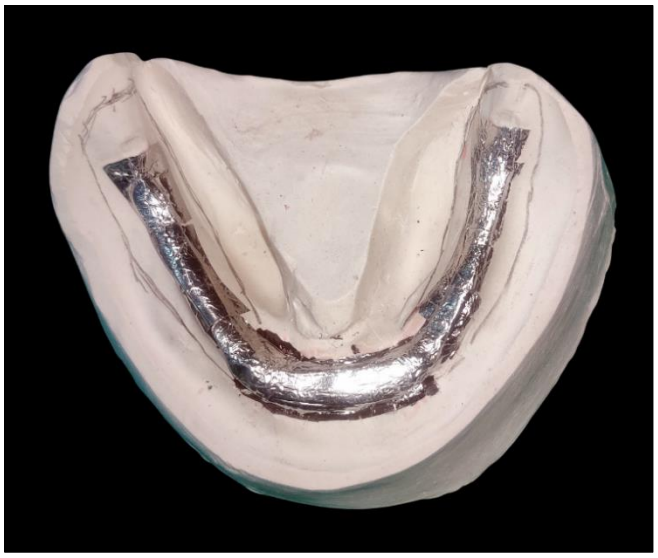

Figure 13: Tin foil adaptation – Mandibular primary cast

Figure 14: Customized prefabricated metal mesh adapted over tin foil – Mandibular primary cast

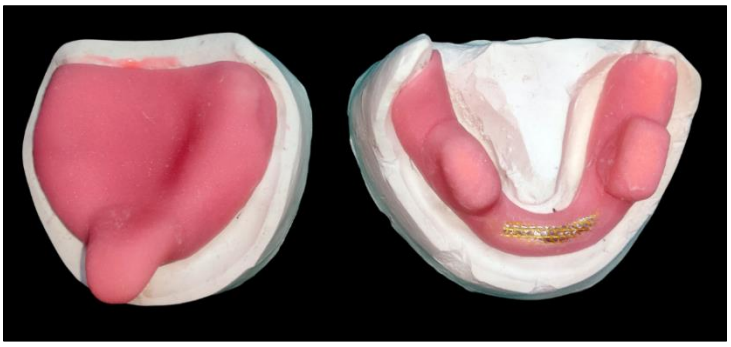

Figure 15: Custom tray fabrication (occlusal view) – Maxillary and mandibular

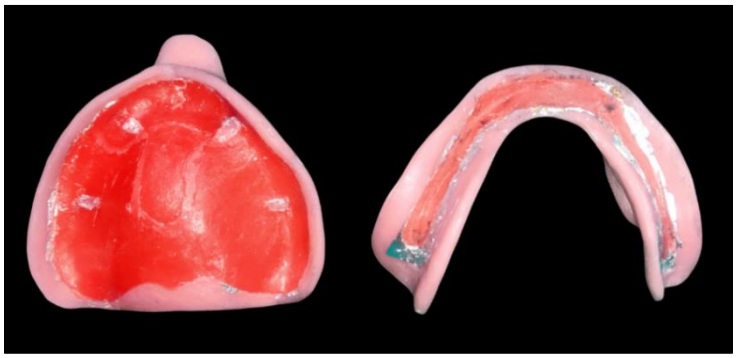

Figure 16: Custom tray fabrication (intaglio view) – Maxillary and mandibular

Figure 17: ASH impression tray – Adapted on mandibular primary cast

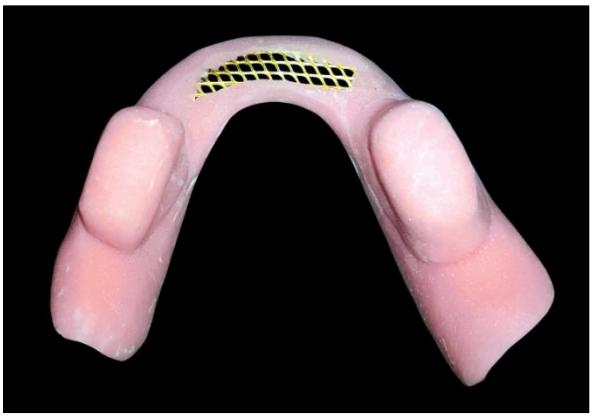

Figure 18: ASH impression tray – Occlusal view

Figure 19: ASH impression tray – Intaglio view

Figure 20: ASH impression tray – Intraoral view

Figure 21: Border molding procedure – Maxillary arch

Figure 22: Wax spacer removal post-border molding – Maxillary arch

Figure 23: Custom tray stabilized with impression compound for closed-mouth impression

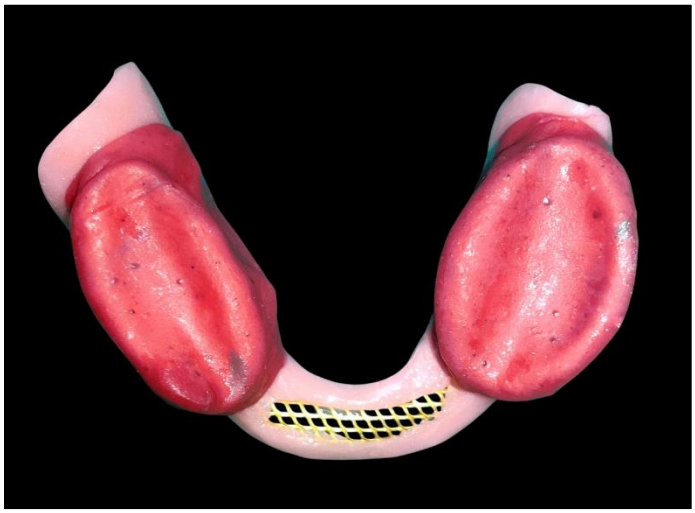

Figure 24: Impression compound on mandibular rests with maxillary ridge indentation

Figure 25: Intraoral view during ASH impression procedure

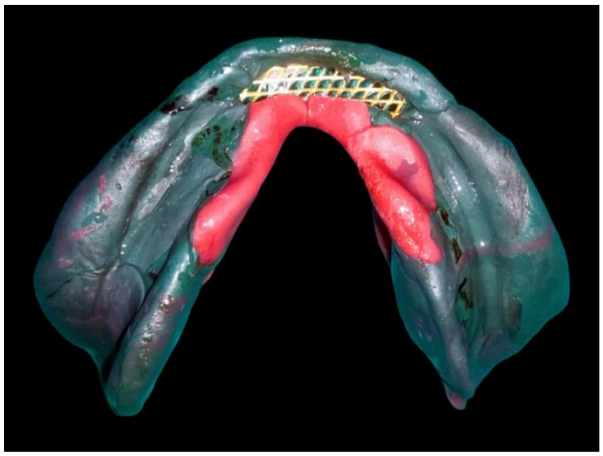

Figure 26: Border molding completed using McCord and Tyson technique – Intaglio view

Figure 27: Border molding completed using McCord and Tyson technique – Occlusal view

Figure 28: Functional definitive impression

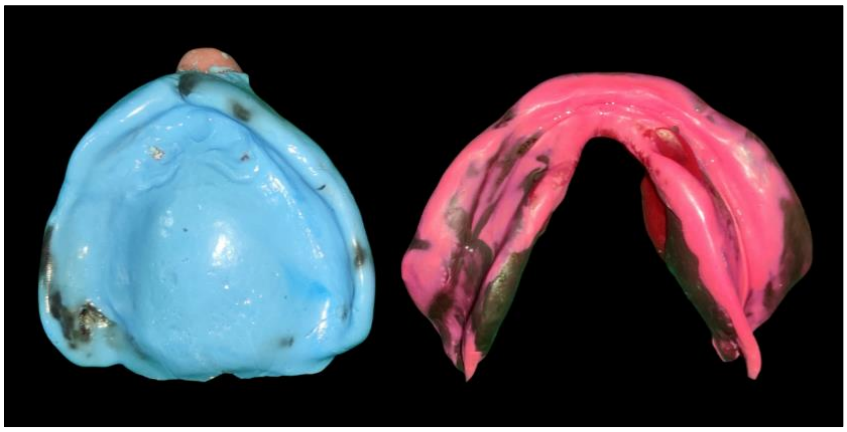

Figure 29: Final impressions – Maxillary and mandibular

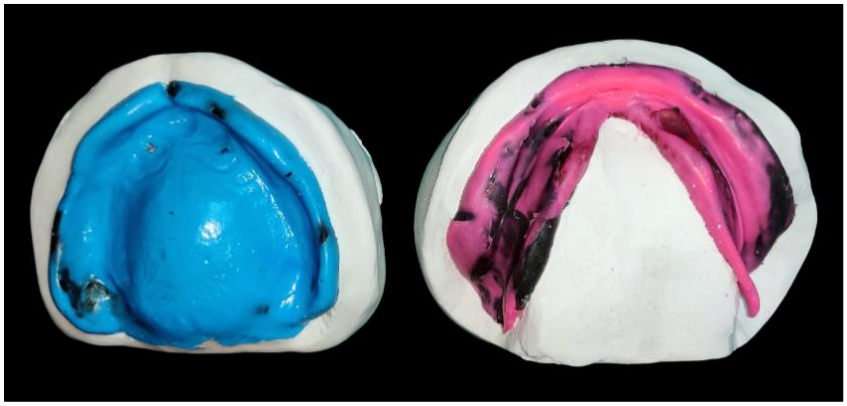

Figure 30: Beading procedure – Maxillary and mandibular

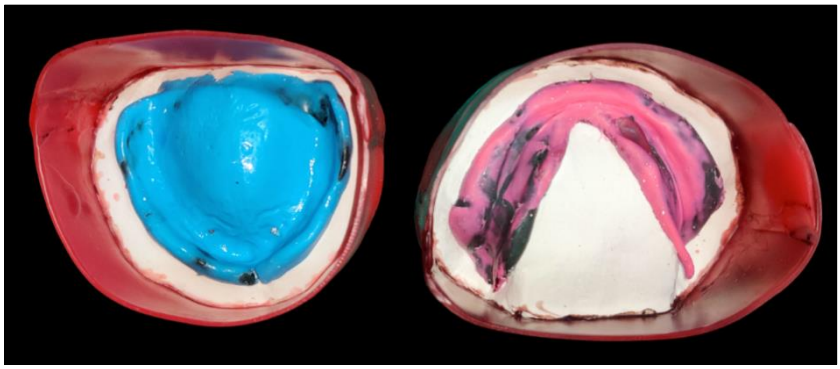

Figure 31: Boxing procedure – Maxillary and mandibular

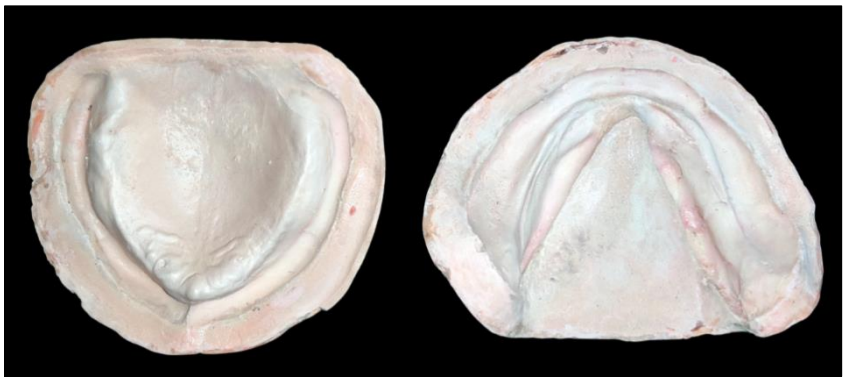

Figure 32: Master casts obtained after beading and boxing – Maxillary and mandibular

Figure 33: Temporary denture bases – Maxillary and mandibular

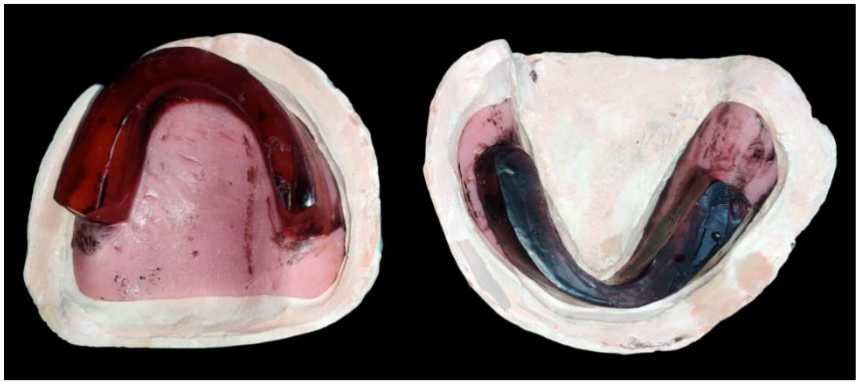

Figure 34: Occlusal rims – Maxillary and mandibular

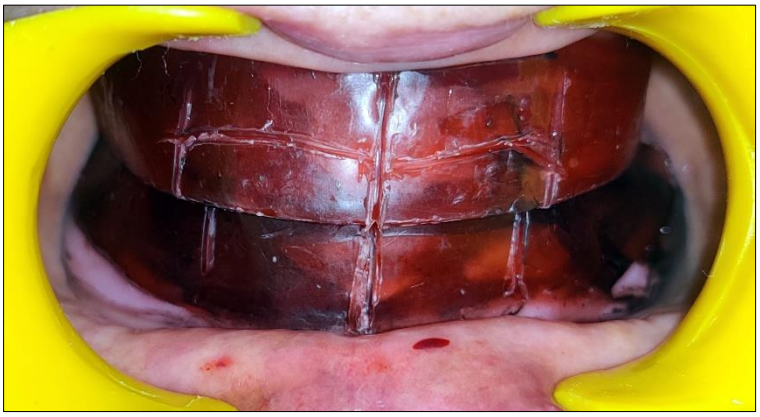

Figure 35: Jaw relation record

Figure 36: Wax try-in – Frontal view

Figure 37: Wax try-in – Smile evaluation

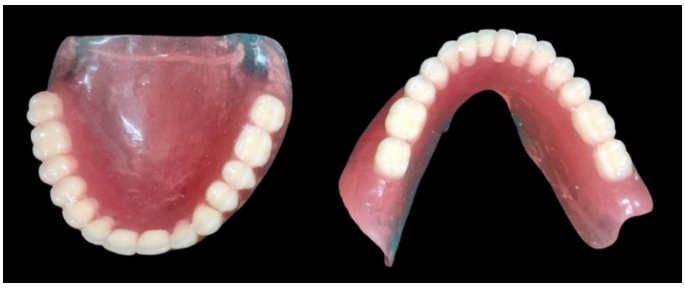

Figure 38: Final complete dentures – Occlusal view

Figure 39: Final complete dentures – Intaglio view

Figure 40: Final complete dentures – Intraoral view

Figure 41: Postoperative smile – Happy and satisfied patient

DISCUSSION

Accurate impression-making remains the cornerstone of successful complete denture prosthodontics, particularly in patients presenting with severely atrophic mandibular ridges. The impression phase—following the diagnostic and preliminary stages—not only serves to reaffirm the clinician's assessment but also provides an invaluable opportunity to evaluate the patient's tissue condition, adaptability, and compliance with the proposed prosthetic plan. In edentulous individuals with significant ridge resorption, the impression is not merely a mechanical capture of surface topography; rather, it is a biologically informed process that must reconcile static anatomical features with dynamic functional movements [13].

Multiple clinical studies have shown a direct correlation between inadequate impression techniques and the prevalence of denture-related complications, including poor stability, mucosal soreness, decreased masticatory efficiency, and compromised patient satisfaction [14-17]. These problems are further compounded in cases of extreme ridge resorption—classified as Atwood's Order V or VI—where the mucosa may be highly mobile, non-keratinized, thin, and interspersed with soft tissue folds. These anatomical variables significantly undermine the effectiveness of a conventional impression strategy, necessitating an approach that accommodates both anatomical fidelity and functional harmony [18].

The primary impression plays a foundational role by capturing the general anatomical contours of the denture-bearing area and aiding in the fabrication of a well-fitting custom tray. However, it is the definitive (secondary) impression that critically influences the long-term prognosis by recording intricate tissue details, the functional extension of the vestibular sulci, and muscle attachments. A recurring error—especially in the mandibular arch—is the failure to properly record essential landmarks, such as the retromolar pad, alveolingual sulcus, mylohyoid region, and retromylohyoid fossae. These structures are vital for achieving a complete peripheral seal, and their omission can dramatically reduce prosthesis retention and stability [19].

In cases where the residual ridge is both low and flat, surrounded by a soft tissue envelope that is highly displaceable or non-resilient, patients often experience what is referred to as the "atrophic sandwich" phenomenon [20]. This clinical condition arises when the mobile mucosa becomes entrapped between a rigid denture base and a severely resorbed bony ridge, leading to tissue trauma, discomfort, and instability. Such cases demand a meticulously planned and biologically sensitive impression strategy.

One time-tested method to address this challenge is the McCord and Tyson Admix Technique, which utilizes a specific ratio (3:7 by weight) of red modeling compound and greenstick compound [8]. The components are softened in a water bath, kneaded into a homogeneous mass, and then loaded into a custom tray. This thermoplastic admixture provides a moldable consistency that allows the clinician to displace and record soft tissue folds, creating a smooth, continuous impression surface. During border molding, controlled thumb pressure is applied intraorally to stabilize the tray, while real-time patient feedback is solicited to identify and relieve pressure-sensitive areas. These regions may later be adjusted directly on the impression using a

heated wax knife, or indirectly on the master cast during the fabrication phase.

One of the key advantages of this admix technique lies in its diagnostic value—it serves as a dynamic tool to evaluate the patient's tissue tolerance and load-bearing capacity, information that is essential for ensuring the comfort and functionality of the final prosthesis. The working time of the admixture, typically 1–2 minutes, is adequate for capturing fine border and functional movements, while its thermoplastic nature allows for repeated adjustments during the same appointment if required [21].

For more neuromuscularly compromised patients, such as those with post-stroke sequelae, Parkinson's disease, or coordination deficits, traditional static impressions often fail to capture the dynamic behavior of oral tissues during function [22]. In such cases, functional impression techniques become indispensable. Two of the most clinically valuable are:

1. **Local Area Modification Technique:** This method selectively relieves or reinforces specific areas of the tray or impression based on intraoral conditions. For instance, pressure-relieving wax may be placed over sensitive regions like the mental foramen or genial tubercles. Alternatively, tissue conditioners or soft liners may be employed temporarily to condition displaceable mucosa prior to the final impression [23, 24].
2. **Neutral Zone Technique (Anthropoidal Pouch Technique):** Introduced to harness the natural balance between the tongue, cheeks, and lips, this technique aims to capture the so-called "neutral zone"—the area where muscle forces are in equilibrium. Recording this zone ensures that the prosthesis is not only stable but also biocompatible with the patient's own functional dynamics, leading to improved comfort, speech, and mastication [11].

Recognizing the limitations of any single technique, a more contemporary innovation—the ASH (Arpit Sikri's Hybrid) Impression Technique—has emerged as a hybrid strategy tailored to the unique challenges of atrophic & flabby mandibular ridges. This technique represents a synthesis of the best features of various impression philosophies, integrating anatomical, functional, and dynamic elements into a single, patient-centered protocol.

The approach begins with the fabrication of a custom tray based on the Dynamic Impression Concept by Tryde *et al*., incorporating flexible tray extensions and mandibular rests that engage the maxillary arch for enhanced stability during border molding. This helps minimize lateral distortion and better records functional tissue behaviour [12].

Subsequently, the McCord and Tyson admix is employed as the impression medium. During the 90-second working time, the patient is instructed to perform a series of controlled functional movements—tongue elevation, protrusion, cheek retraction, and swallowing. These actions engage the dynamic muscular environment, allowing the impression material to mold in concert with soft tissue movements. The result is a detailed, functionally accurate negative of the oral environment, particularly suited for well-rounded or depressed ridges with minimal masticatory load tolerance [8].

The ASH (Arpit Sikri's Hybrid) Impression Technique is especially effective in:

- Ensuring accurate recording of both primary and secondary stress-bearing areas.
- Minimizing trauma to delicate oral mucosa.
- Capturing the full functional periphery of the mandibular denture-bearing area.
- Facilitating the fabrication of a denture that is biologically compatible, mechanically stable, and patient-friendly.

Impression-making for patients with severely atrophic & flabby mandibular ridges demands more than routine clinical execution—it requires a nuanced, individualized approach that combines anatomical knowledge, material science, and functional awareness. Techniques such as the McCord and Tyson admix and the innovative ASH (Arpit Sikri's Hybrid) Impression Technique exemplify how integrating static and dynamic recording philosophies can transform clinical outcomes. By tailoring the impression method to the patient's unique oral environment, clinicians can achieve superior denture fit, function, and long-term comfort, even in the most challenging cases.

CONCLUSION

The present case report underscores the pivotal role of tailored impression techniques in the successful prosthodontic rehabilitation of patients with Atwood's Order V ridge deformities—characterized by flat, atrophic, and depressed mandibular ridges. Such ridge conditions pose a significant challenge due to their compromised anatomy and vulnerability to further resorption.

This clinical approach demonstrates how a combination of modified impression techniques can be employed not only to ensure optimal retention, stability, and support of the final prosthesis but also to safeguard the already delicate residual ridge from additional trauma. The definitive impression

obtained using these techniques contributes significantly to the fabrication of a well-adapted prosthesis, thereby enhancing the patient's masticatory efficiency, phonetics, and overall comfort.

Importantly, the technique highlighted offers an economical yet highly effective solution for patients with severely resorbed ridges, without compromising on functional and esthetic outcomes. By adapting the impression strategy to meet the specific anatomical and physiological needs of the patient, this method proves to be a reliable and reproducible tool in the prosthodontist's armamentarium for managing complex edentulous cases.

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